

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

ATTORNEY DOCKET NUMBER: 100203592-1

IN RE APPLICATION OF: U.S. Patent No. 7,325,170

USPTO CONFIRMATION CODE: 7839

APPLICATION NO.: 10/804,290

FILED: Mar. 19, 2004

EXAMINER: Robert Beausoliel

GROUP ART UNIT: 2113

FOR: METHOD AND SYSTEM FOR PROVIDING INFORMATION FOR REMOTE  
DEVICE SUPPORT

37 CFR 1.322 & 37 CFR 1.323 REQUEST FOR CERTIFICATE OF CORRECTION

HONORABLE COMMISSIONER OF PATENTS & TRADEMARKS

Sir:

The following is a request for a certificate of correction in Serial Number  
10/804,290, now Patent Number 7,325,170.

A certificate of correction under 35 USC 254 is respectfully requested in the  
above-identified patent.

☒ All errors were the fault of the USPTO, no fee required. In the event that a further  
fee is required, please charge the amount to Deposit Account No. 082025.

☐ All errors were the fault of the applicant and, accordingly, please charge **\$100.00**  
to our Deposit Account No. 082025. In the event that a further fee is required, please  
charge the amount to the same Deposit Account.

☐ The errors were the fault of both the applicant and USPTO and, accordingly,  
please charge **\$100.00** to our Deposit Account No. 082025. In the event that a further fee  
is required, please charge the amount to the same Deposit Account.

The exact locations where the errors appear in the patent and patent application  
are as follows:

In column 15, line 30, below "</html>"  
insert - -

#### APPENDIX D

A portion of an embodiment of the device tester 304

```
#include <windows.h>
#include <tchar.h>
#include <stdlib.h>
#include <stdio.h>
#include <setupapi.h>
#include <cfgmgr32.h>
#include <string.h>
#include <malloc.h>
#include <newdev.h>

#define ARRAYSIZE(x) (sizeof(x)/sizeof(x[0]))
#define INSTANCEID_PREFIX_CHAR TEXT('@') // character used to prefix instance ID's
#define CLASS_PREFIX_CHAR    TEXT('=') // character used to prefix class
name
#define WILD_CHAR            TEXT('*') // wild character
#define QUOTE_PREFIX_CHAR    TEXT('"') // prefix character to ignore wild
characters

int EnumerateDevice();
int removeDevice(char *devID);
LPTSTR GetDeviceDescription(HDEVINFO Devs,PSP_DEVINFO _DATA DevInfo);

BOOL DumpDeviceDescr(HDEVINFO Devs,PSP_DEVINFO _DATA DevInfo); BOOL
DumpDeviceStatus(HDEVINFO Devs,PSP_DEVINFO _DATA DevInfo); BOOL
DumpDeviceWithInfo(HDEVINFO Devs,PSP_DEVINFO _DATA DevInfo,LPCWSTR Info);

#ifdef UNICODE
#define UPDATEDRIVERFORPLUGANDPLAYDEVICES
"UpdateDriverForPlugAndPlayDevicesW"
#else
#define UPDATEDRIVERFORPLUGANDPLAYDEVICES
"UpdateDriverForPlugAndPlayDevicesA"
#endif

//
// exit codes
//
#define EXIT_OK    (0)
#define EXIT_REBOOT (1)
#define EXIT_FAIL  (2)
#define EXIT_USAGE (3)
```

```

typedef struct {
    DWORD count;
    DWORD control;
    BOOL reboot;
    LPCTSTR strSuccess;
    LPCTSTR strReboot;
    LPCTSTR strFail;
}
GenericContext;

#define FIND_DEVICE      0x00000001 // display device
#define FIND_STATUS      0x00000002 // display status of device
#define FIND_RESOURCES    0x00000004 // display resources of device
#define FIND_DRIVERS      0x00000008 // display drivers used by device
#define FIND_HWIDS        0x00000010 // display hw/compat id's used by
device
#define FIND_DRIVERNODES  0x00000020 // display driver nodes for a device

Devcon.cpp
=====
#include "devcon.h"
#include <string.h>

FILE *stream;
char *outfile;

TCHAR      szBuffer [6000];

void EncodeXML.String(string szInput, string& szOutput)
{
    string strBuffer;
    size_t nFirstIndex;
    strBuffer = szInput;
    nFirstIndex = strBuffer.find(_T(">"), 0);
    while (nFirstIndex != string::npos)
    {
        strBuffer = strBuffer.replace(nFirstIndex, _tcslen(_T(">")), _T("&gt;"));
        nFirstIndex = strBuffer.find(_T(">"), nFirstIndex+1);
    }
    nFirstIndex = strBuffer.find(_T("<"), 0);
    while (nFirstIndex != string::npos)
    {
        strBuffer = strBuffer.replace(nFirstIndex, _tcslen(_T("<")), _T("&lt;"));
        nFirstIndex = strBuffer.find(_T("<"), nFirstIndex+1);
    }
    nFirstIndex = strBuffer.find(_T(""), 0);

```

```

while (nFirstIndex != string::npos)
{
    strBuffer = strBuffer.replace(nFirstIndex, _tcslen(_T("")), _T("&apos;"));
    nFirstIndex = strBuffer.find(_T(""), nFirstIndex + 1);
}
nFirstIndex = strBuffer.find(_T(""), 0);
while (nFirstIndex != string::npos)
{
    strBuffer = strBuffer.replace(nFirstIndex, _tcslen(_T("")), _T("&quot;"));
    nFirstIndex = strBuffer.find(_T(""), nFirstIndex + 1);
}
nFirstIndex = strBuffer.find(_T("&"), 0);
while (nFirstIndex != string::npos)
{
    if (nFirstIndex != strBuffer.find(_T("&"), nFirstIndex) &&
        nFirstIndex != strBuffer.find(_T("&gt;"), nFirstIndex) &&
        nFirstIndex != strBuffer.find(_T("&lt;"), nFirstIndex) &&
        nFirstIndex != strBuffer.find(_T("&apos;"), nFirstIndex) &&
        nFirstIndex != strBuffer.find(_T("&quot;"), nFirstIndex))
    {
        strBuffer = strBuffer.replace(nFirstIndex, 1, _T("&"));
    }
    nFirstIndex = strBuffer.find(_T("&"), nFirstIndex + 1);
}
szOutput = strBuffer;
} //EncodeXMLString

```

```

LPCTSTR GetDeviceStringProperty(HDEVINFO Devs,PSP_DEVINFO_DATA
DevInfo,DWORD
Prop)
{
    LPCTSTR buffer,
    DWORD size;
    DWORD reqSize;
    DWORD dataType;
    DWORD szChars;
    size = 1024;
    buffer = new TCHAR[(size/sizeof(TCHAR))+1];
    if(!buffer)
    {
        return NULL;
    }
    while(!SetupDiGetDeviceRegistryProperty(Devs,DevInfo,Prop,&dataType,(LPBYTE)
buffer,size,&reqSize))
    {
        if(GetLastError() != ERROR_INSUFFICIENT_BUFFER) {

```

```

        goto failed;
    }
    if(dataType != REG_SZ) {
        goto failed;
    }
    size = reqSize;
    delete [] buffer;
    buffer = new TCHAR[(size/sizeof(TCHAR))+1];
    if(!buffer) {
        goto failed;
    }
}
szChars = reqSize/sizeof(TCHAR);
buffer[szChars] = TEXT('\0');
return buffer;
failed:
if(buffer) {
    delete [] buffer;
}
return NULL;
}

LPTSTR GetDeviceDescription(HDEVINFO Devs,PSP_DEVINFO_DATA DevInfo) {
    LPTSTR desc;
    desc = GetDeviceStringProperty(Devs,DevInfo,SPDRP_FRIENDLYNAME);
    if(!desc) {
        desc = GetDeviceStringProperty(Devs,DevInfo,SPDRP_DEVICEDESC);
    }
    return desc;
}

void replaceStr(char *Str,char *newDevId, char ch)
{
    char *word;
    word = strtok(Str,"&");
    strcpy(newDevId,word);
    while(word!=NULL)
    {
        word = strtok(NULL,"&");
        if(word==NULL) break;
        strcat(newDevId,"&");
        strcat(newDevId,word);
    }
    return;
}

```

```

BOOL DumpDeviceWithInfo(HDEVINFO Devs,PSP_DEVINFO_DATA DevInfo,LPCWSTR
Info) {
    TCHAR devID[MAX_DEVICE_ID_LEN];
    BOOL b = TRUE;
    SP_DEVINFO_LIST_DETAIL_DATA devInfoListDetail;
    devInfoListDetail.cbSize = sizeof(devInfoListDetail);
    if(CM_Get_Device_ID(DevInfo->DevInst,devID,MAX_DEVICE_ID_LEN,0) != CR_SUCCESS)
    {
        strcpy(devID,TEXT("?"));
        b = FALSE;
    }
    string szDevID=devID;
    string szOutputDevId;
    EncodeXML.String(szDevID,szOutputDevId);
    printf("\n%s",szOutputDevId.c_str());
    fprintf(stream,"\n\t\t<DeviceID>%s</DeviceID>",szOutputDevId.c_str());
    return b;
}

BOOL DumpDeviceDescr(HDEVINFO Devs,PSP_DEVINFO_DATA DevInfo)
{
    LPCTSTR desc;
    const int iStringMaximumLength_c = 8048;
    WCHAR szwBigBuffer[iStringMaximumLength_c];
    const int iMaxEight_c = 10096;
    CHAR szBigBuffer[iMaxEight_c];
    desc = GetDeviceDescription(Devs,DevInfo);
    if(!desc) {
        printf("\nDevice Description is not available for this device");
        return FALSE;
    }
    MultiByteToWideChar(CP_ACP, 0, desc, -1, szwBigBuffer,
sizeof(szwBigBuffer));
    WideCharToMultiByte(CP_UTF8, 0, szwBigBuffer, -1, szBigBuffer,
sizeof(szBigBuffer), NULL, NULL);
    fprintf(stream,"\n\t\t<DeviceDescription>%s</DeviceDescription>",szBigBu
ffer);
    printf("\n%s",desc);
    delete [] desc;
    return TRUE;
}

BOOL DumpDeviceStatus(HDEVINFO Devs,PSP_DEVINFO_DATA DevInfo)
{
    SP_DEVINFO_LIST_DETAIL_DATA devInfoListDetail;

```

```

ULONG status = 0;
ULONG problem = 0;
BOOL hasInfo = FALSE;
CM_API_CONFIGRET WINAPI CM_Get_DevNode_Status(OUT PULONG
pulStatus,OUT PULONG pulProblemNumber,IN DEVINST dnDevInst,IN ULONG ulFlags );
devInfoListDetail.cbSize = sizeof(devInfoListDetail);
if(CM_Get_DevNode_Status(&status,&problem,DevInfo->DevInst,0)!=CR_SUCCESS)
{
    return FALSE;
}
printf("\nError Code : %i",problem);
fprintf(stream,"\n\t<ErrorCode>%i</ErrorCode>",problem);
if((status & DN_HAS_PROBLEM) && problem == CM_PROB_DISABLED)
{
    hasInfo = TRUE;
    printf("\n%s","Device is disabled");
    fprintf(stream,"\n\t<Status>%s</Status>","Device is disabled");
    return TRUE;
}
if(status & DN_HAS_PROBLEM)
{
    hasInfo = TRUE;
    printf("\n%s","Device has a problem");
    fprintf(stream,"\n\t<Status>%s</Status>","Device has a problem");
}
if(status & DN_PRIVATE_PROBLEM)
{
    hasInfo = TRUE;
    printf("\n%s","Device has a problem reported by the driver");
    fprintf(stream,"\n\t<Status>%s</Status>","Device has a problem reported by
the driver");
}
if(status & DN_STARTED)
{
    printf("\n%s","Device has been started");
    fprintf(stream,"\n\t<Status>%s</Status>","Device has been started");
}
else if (!hasInfo)
{
    fprintf(stream,"\n\t<Status>%s</Status>","Device is currently stopped");
    printf("\nDevice is currently stopped");
}
return TRUE;
}

int GetDeviceInfoAndDelete(char * devIDtoDelete)

```

```

{
    HDEVINFO devs = INVALID_HANDLE_VALUE;
    DWORD err;
    int failcode = EXIT_FAIL;
    DWORD devIndex;
    SP_DEVINFO_DATA devInfo;
    SP_DEVINFO_LIST_DETAIL_DATA devInfoListDetail;
    BOOL matchFound = FALSE;
    SP_REMOVEDEVICE_PARAMS rmdParams;
    LPCTSTR action = NULL;
    TCHAR devID[MAX_DEVICE_ID_LEN];
    devInfoListDetail.cbSize = sizeof(devInfoListDetail);
    printf("Device to be deleted is %s", devIDtoDelete);
    devs = SetupDiGetClassDevs(
        NULL, NULL, NULL, DIGCF_ALLCLASSES | DIGCF_PRESENT);
    if (devs == INVALID_HANDLE_VALUE)
    {
        err = GetLastError();
        printf("SetupDiGetClassDevs failed: %lx\n", err);
        failcode = EXIT_FAIL;
        goto final;
    }
    devInfoListDetail.RemoteMachineHandle = NULL;
    strcpy(devInfoListDetail.RemoteMachineName, "");
    devInfoListDetail.cbSize = sizeof(devInfoListDetail);
    devInfoListDetail.cbSize = sizeof(SP_DEVINFO_LIST_DETAIL_DATA);
    devInfo.cbSize = sizeof(devInfo);
    for (devIndex = 0; SetupDiEnumDeviceInfo(devs, devIndex, &devInfo); devIndex++)
    {
        if (CM_Get_Device_ID(devInfo.DevInst, devID, MAX_DEVICE_ID_LEN, 0) != CR_SUCCESS)
        {
            strcpy(devID, TEXT("?"));
        }
        printf("Dev ID for comparison is : %s\n", devID);
        if (strcmp(devID, devIDtoDelete) == 0)
        {
            printf("A match found");
            matchFound = TRUE;
            rmdParams.ClassInstallHeader.cbSize =
                sizeof(SP_CLASSINSTALL_HEADER);
            rmdParams.ClassInstallHeader.InstallFunction =
                DIF_REMOVE;
            rmdParams.Scope = DI_REMOVEDEVICE_GLOBAL;
            rmdParams.HwProfile = 0;
            if (!SetupDiSetClassInstallParams(devs, &devInfo, &rmdParams.ClassInstallHeader,
                sizeof(rmdParams)) || !SetupDiCallClassInstaller(DIF_REMOVE, devs, &devInfo))

```



```

        {
            failcode = EXIT_FAIL;
            goto final;
        }
        printf("\n\n Device has been deleted");
        break;
    }
}
// The device was deleted!!
if(matchFound == FALSE)
{
    printf("\n\n No matching device id found!!");
    failcode = EXIT_FAIL;
}
else
{
    failcode = EXIT_OK;
}
final:
if(devs != INVALID_HANDLE_VALUE) {
    printf("destorying DevsInfoList");
    SetupDiDestroyDeviceInfoList(devs);
    printf("After destorying DevsInfoList");
}
return failcode;
}

int EnumerateDevice()
{
    HDEVINFO devs = INVALID_HANDLE_VALUE;
    DWORD err;
    int failcode = EXIT_FAIL;
    DWORD devIndex;
    SP_DEVINFO_DATA devInfo;
    SP_DEVINFO_LIST_DETAIL_DATA devInfoListDetail;
    DWORD numClass = 0;
    int skip = 0;
    devs = SetupDiGetClassDevs(
        NULL, NULL, NULL, DIGCF_ALLCLASSES|DIGCF_PRESENT);
    //devs = SetupDiGetClassDevs(
        NULL, NULL, NULL, DIGCF_ALLCLASSES|DIGCF_PROFILE);
    if(devs == INVALID_HANDLE_VALUE)
    {
        err = GetLastError();
        printf("SetupDiGetClassDevsEx failed: %lx\n", err);
        failcode = EXIT_FAIL;
    }

```

```

        goto final;
    }
    devInfoListDetail.RemoteMachineHandle = NULL;
    strcpy(devInfoListDetail.RemoteMachineName, "");
    devInfoListDetail.cbSize = sizeof(devInfoListDetail);
    devInfoListDetail.cbSize = sizeof(SP_DEVINFO_LIST_DETAIL_DATA);
    devInfo.cbSize = sizeof(devInfo);
    for(devIndex=0; SetupDiEnumDeviceInfo(devs, devIndex, &devInfo); devIndex++)
    {
        TCHAR devID[MAX_DEVICE_ID_LEN];
        if(CM_Get_Device_ID(devInfo.DevInst, devID, MAX_DEVICE_ID_LEN, 0) != CR_SUCCESS)
        {
            lstrcpy(devID, TEXT("?"));
        }
        // printf("Dev ID for comparison is  %s \n", devID);
        printf("\n\n");
        fprintf(stream, "\n<Device>");
        if(!DumpDeviceWithInfo(devs, &devInfo, NULL)) return EXIT_OK;
        DumpDeviceDescr(devs, &devInfo);
        DumpDeviceStatus(devs, &devInfo);
        fprintf(stream, "\n</Device>");
    }
    failcode = EXIT_OK;
final:
    if(devs != INVALID_HANDLE_VALUE) {
        SetupDiDestroyDeviceInfoList(devs);
    }
    return failcode;
}

int removeDevice(char *devID)
{
    printf("%s", devID);
    return GetDeviceInfoAndDelete(devID);
}

int listDeviceStatus()
{
    int result;
    if(outfile != NULL)
    {
        stream = fopen(outfile, "w" );
    }
    else
    {
        stream = fopen("devlist.xml", "w" );
    }
}

```

```

    }
    fprintf(stream, "<DeviceManager>");
    result = EnumerateDevice();
    fprintf(stream, "\n</DeviceManager>");
    fclose( stream );
    return result;
}

void writeReturnCode(int code)
{
    FILE *Ostream;
    Ostream = fopen( "DMStatus.out", "w" );
    fprintf(Ostream, "%i", code);
    fclose(Ostream);
}

void main(int argc, LPCTSTR argv[])
{
    int retval;
    if(argc<2)
    {
        printf("Wrong arguments");
        writeReturnCode(3);
        exit(3);
    }
    if(strcmp(argv[1], "remove")==0)
    {
        //Check if the id is specified
        printf("calling remove device %s ", argv[2]);
        if(argv[2]==NULL)
        {
            printf("Missing device id");
            writeReturnCode(3);
            exit(3);
        }
        retval = removeDevice(argv[2]);
        writeReturnCode(retval);
        exit(retval);
    }
    if(strcmp(argv[1], "status")==0)
    {
        // if the out file name is specified
        if(argc==3)
        {
            outfile =argv[2];
        }

        printf("Calling status");
        retval = listDeviceStatus();
        writeReturnCode(retval);
        exit(retval);
    }
    writeReturnCode(2);
    exit(2);
}

```

(Specification filed on Mar. 19, 2004, pages 26-36)

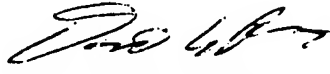
In column 16, line 2, in Claim 3, delete "Suitable" and insert - - suitable - -,  
therefor.  
(Examiner's amendment to claims dated Sep. 18, 2007, page 3, in Claim 4, line 6)

In column 16, line 52, in Claim 9, delete "deivce" and insert - - device - -,  
therefor.  
(Examiner's amendment to claims dated Sep. 18, 2007, page 4, in Claim 10, line  
11)

The requested corrections are attached on Form PTO 1050.

Respectfully Submitted

April 24, 2008  
DATE

  
Name: David A. Plettner  
Registration No.: 36,241

Attorney/Agent of Record

HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
P.O. Box 272400  
Fort Collins, Colorado 80527-2400

## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 1 of 21

PATENT NO : 7,325,170  
APPLICATION NO. : 10/804,290  
ISSUE DATE : Jan. 29, 2008  
INVENTOR(S) : Karamadai Srinivasan, et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In column 15, line 30, below "</html>"  
insert - -

### APPENDIX D

A portion of an embodiment of the device tester 304

```
#include <windows.h>
#include <ichar.h>
#include <stdlib.h>
#include <stdio.h>
#include <setupapi.h>
#include <cfgmgr32.h>
#include <string.h>
#include <malloc.h>
#include <newdev.h>

#define ARRAYSIZE(x) (sizeof(x)/sizeof(x[0]))
#define INSTANCEID_PREFIX_CHAR TEXT('@') // character used to prefix instance ID's
#define CLASS_PREFIX_CHAR TEXT('-') // character used to prefix class
name
#define WILD_CHAR TEXT('*') // wild character
#define QUOTE_PREFIX_CHAR TEXT('"') // prefix character to ignore wild
characters
```

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Intellectual Property Administration  
P. O. Box 272400  
Fort Collins, Colorado 80527-2400

This collection of information is required by 37 CFR 1.322, and 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P. O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patent, P.O. Box 1450, Alexandria, VA 22313-1450.

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## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 2 of 21

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```
int EnumerateDevice();  
int removeDevice(char *devID);  
LPCTSTR GetDeviceDescription(HDEVINFO Devs,PSP_DEVINFO_DATA DevInfo).  
  
BOOL DumpDeviceDescr(HDEVINFO Devs,PSP_DEVINFO_DATA DevInfo), BOOL  
DumpDeviceStatus(HDEVINFO Devs,PSP_DEVINFO_DATA DevInfo); BOOL  
DumpDeviceWithInfo(HDEVINFO Devs,PSP_DEVINFO_DATA DevInfo,LPCTSTR Info),  
  
#ifdef _UNICODE  
#define UPDATEDRIVERFORPLUGANDPLAYDEVICES  
"UpdateDriverForPlugAndPlayDevicesW"  
#else  
#define UPDATEDRIVERFORPLUGANDPLAYDEVICES  
"UpdateDriverForPlugAndPlayDevicesA"  
#endif  
  
//  
// exit codes  
//  
#define EXIT_OK (0)  
#define EXIT_REBOOT (1)  
#define EXIT_FAIL (2)  
#define EXIT_USAGE (3)
```

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```
typedef struct {
    DWORD count,
    DWORD control;
    BOOL reboot;
    LPCTSTR strSuccess;
    LPCTSTR strReboot;
    LPCTSTR strFail;
};
GenericContext;

#define FIND_DEVICE      0x00000001 // display device
#define FIND_STATUS      0x00000002 // display status of device
#define FIND_RESOURCES   0x00000004 // display resources of device
#define FIND_DRIVERS      0x00000008 // display drivers used by device
#define FIND_HWIDS        0x00000010 // display hw/compat id's used by
device
#define FIND_DRIVERNODES 0x00000020 // display driver nodes for a device

Deveon.cpp
=====
#include "devcon.h"
#include <string.h>

FILE *stream;
char *outfile;
```

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It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

TCHAR      szBuffer [6000];

void EncodeXMLString(string szInput, string& szOutput)
{
    string strBuffer;
    size_t nFirstIndex;
    strBuffer = szInput;
    nFirstIndex = strBuffer.find(_T(">"), 0);
    while (nFirstIndex != string::npos)
    {
        strBuffer = strBuffer.replace(nFirstIndex, _tcslen(_T("<")), _T("&gt;"));
        nFirstIndex = strBuffer.find(_T(">"), nFirstIndex + 1);
    }
    nFirstIndex = strBuffer.find(_T("<"), 0);
    while (nFirstIndex != string::npos)
    {
        strBuffer = strBuffer.replace(nFirstIndex, _tcslen(_T("<")), _T("&lt;"));
        nFirstIndex = strBuffer.find(_T("<"), nFirstIndex + 1);
    }
    nFirstIndex = strBuffer.find(_T(""), 0);

```

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## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 5 of 21

PATENT NO : 7,325,170

APPLICATION NO. : 10/804,290

ISSUE DATE : Jan. 29, 2008

INVENTOR(S) : Karamadai Srinivasan, et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```
while (nFirstIndex != string::npos)
{
    strBuffer = strBuffer.replace(nFirstIndex, _tcslen(_T("l")), _T("&apos;"));
    nFirstIndex = strBuffer.find(_T("l"), nFirstIndex + 1);
}
nFirstIndex = strBuffer.find(_T("v"), 0);
while (nFirstIndex != string::npos)
{
    strBuffer = strBuffer.replace(nFirstIndex, _tcslen(_T("l")), _T("&quot;"));
    nFirstIndex = strBuffer.find(_T("v"), nFirstIndex + 1);
}
nFirstIndex = strBuffer.find(_T("&"), 0);
while (nFirstIndex != string::npos)
{
    if (nFirstIndex != strBuffer.find(_T("&"), nFirstIndex) &&
        nFirstIndex != strBuffer.find(_T("&gt;"), nFirstIndex) &&
        nFirstIndex != strBuffer.find(_T("&lt;"), nFirstIndex) &&
        nFirstIndex != strBuffer.find(_T("&apos;"), nFirstIndex) &&
        nFirstIndex != strBuffer.find(_T("&quot;"), nFirstIndex))
    {
        strBuffer = strBuffer.replace(nFirstIndex, 1, _T("&"));
    }
    nFirstIndex = strBuffer.find(_T("&"), nFirstIndex + 1);
}
szOutput = strBuffer;
} //EncodeXMLString
```

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## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 6 of 21

PATENT NO : 7,325,170

APPLICATION NO. : 10/804,290

ISSUE DATE : Jan. 29, 2008

INVENTOR(S) : Karamadai Srinivasan, et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

LPTSTR GetDeviceStringProperty(HDEVINFO Devs,PSP_DEVINFO_DATA
DevInfo,DWORD
Prop)
{
    LPTSTR buffer;
    DWORD size;
    DWORD reqSize;
    DWORD dataType;
    DWORD szChars;
    size = 1024;
    buffer = new TCHAR[(size/sizeof(TCHAR))+1];
    if(!buffer)
    {
        return NULL;
    }
    while(!SetupDiGetDeviceRegistryProperty(Devs,DevInfo,Prop,&dataType,(LPBYTE)
buffer,size,&reqSize))
    {
        if(GetLastError() != ERROR_INSUFFICIENT_BUFFER) {

```

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## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 7 of 21

PATENT NO : 7,325,170

APPLICATION NO. : 10/804,290

ISSUE DATE : Jan. 29, 2008

INVENTOR(S) : Karamadai Srinivasan, et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

        goto failed;
    }
    if(dataType != REG_SZ) {
        goto failed;
    }
    size = reqSize;
    delete [] buffer;
    buffer = new TCHAR[(size/sizeof(TCHAR))+1];
    if(!buffer) {
        goto failed;
    }
    {
        szChars = reqSize/sizeof(TCHAR);
        buffer[szChars] = TEXT('%0');
        return buffer;
    }
failed:
    if(buffer) {
        delete [] buffer;
    }
    return NULL;
}

```

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# UNITED STATES PATENT AND TRADEMARK OFFICE

## CERTIFICATE OF CORRECTION

Page 8 of 21

PATENT NO : 7,325,170

APPLICATION NO. : 10/804,290

ISSUE DATE : Jan. 29, 2008

INVENTOR(S) : Karamadai Srinivasan, et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

LPTSTR GetDeviceDescription(HDEVINFO Devs,PSP_DEVINFO_DATA DevInfo) {
    LPTSTR desc;
    desc = GetDeviceStringProperty(Devs,DevInfo,SPDRP_FRIENDLYNAME);
    if(!desc) {
        desc = GetDeviceStringProperty(Devs,DevInfo,SPDRP_DEVICEDESC);
    }
    return desc;
}

void replaceStr(char *Str,char *newDevId, char ch)
{
    char *word;
    word = strtok(Str,"&");
    strcpy(newDevId,word);
    while(word!=NULL)
    {
        word = strtok(NULL,"&");
        if(word==NULL) break;
        strcat(newDevId,"&");
        strcat(newDevId,word);
    }
    return;
}

```

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# UNITED STATES PATENT AND TRADEMARK OFFICE

## CERTIFICATE OF CORRECTION

Page 9 of 21

PATENT NO : 7,325,170

APPLICATION NO. : 10/804,290

ISSUE DATE : Jan. 29, 2008

INVENTOR(S) : Karamadai Srinivasan, et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

BOOL DumpDeviceWithInfo(HDEVINFO Devs,PSP_DEVINFO_DATA DevInfo,LPCTSTR
Info) {
    TCHAR devID[MAX_DEVICE_ID_LEN];
    BOOL b = TRUE;
    SP_DEVINFO_LIST_DETAIL_DATA devInfoListDetail;
    devInfoListDetail.cbSize = sizeof(devInfoListDetail);
    if(CM_Get_Device_ID(DevInfo-
    >DevInst,devID,MAX_DEVICE_ID_LEN,0) != CR_SUCCESS)
    {
        strcpy(devID,TEXT("?"));
        b = FALSE;
    }
    string szDevID=devID,
    string szOutputDevID,
    EncodeXML.String(szDevID,szOutputDevID);
    printf("\n%s",szOutputDevID.c_str());
    fprintf(stream,"\n\t\t<DeviceID>\"%s\"</DeviceID>",szOutputDevID.c_str());
    return b;
}

```

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## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 10 of 21

PATENT NO : 7,325,170

APPLICATION NO. : 10/804,290

ISSUE DATE : Jan. 29, 2008

INVENTOR(S) : Karamadai Srinivasan, et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

BOOL DumpDeviceDescr(HDEVINFO Devs,PSP_DEVINFO_DATA DevInfo)
{
    LPTSTR desc;
    const int      iStringMaximumLength_c = 8048;
    WCHAR          szwBigBuffer[iStringMaximumLength_c];
    const int      iMaxEight_c = 10096;
    CHAR           szBigBuffer[iMaxEight_c];
    desc = GetDeviceDescription(Devs,DevInfo);
    if(!desc) {
        printf("\nDevice Description is not available for this device");
        return FALSE;
    }
    MultiByteToWideChar(CP_ACP, 0, desc, -1, szwBigBuffer,
        sizeof(szwBigBuffer));
    WideCharToMultiByte(CP_UTF8, 0, szwBigBuffer, -1, szBigBuffer,
        sizeof(szBigBuffer), NULL, NULL);
    fprintf(stream, "\n\\DeviceDescription\\ \"%s\"\\DeviceDescription-\".szBigBu
        ffer);
    printf("\n%s",desc);
    delete [] desc;
    return TRUE;
}

BOOL DumpDeviceStatus(HDEVINFO Devs,PSP_DEVINFO_DATA DevInfo)
{
    SP_DEVINFO_LIST_DETAIL_DATA devInfoListDetail;

```

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## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

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PATENT NO : 7,325,170

APPLICATION NO. : 10/804,290

ISSUE DATE : Jan. 29, 2008

INVENTOR(S) : Karamadai Srinivasan, et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

ULONG status = 0;
ULONG problem = 0;
BOOL hasInfo = FALSE;
    CMAPI_CONFIGRET WINAPI CM_Get_DevNode_Status(OUT PULONG
pulStatus,OUT PULONG pulProblemNumber,IN DEVINST dnDevInst,IN ULONG ulFlags );
    devInfoListDetail.cbSize = sizeof(devInfoListDetail);
    if(CM_Get_DevNode_Status(&status,&problem,DevInfo->DevInst,0)!=CR_SUCCESS)
    {
        return FALSE;
    }
    printf("\nError Code : %i",problem);
    fprintf(stream,"\n\\t<ErrorCode>%i</ErrorCode>",problem);
    if((status & DN_HAS_PROBLEM) && problem == CM_PROB_DISABLED)
    {
        hasInfo = TRUE;
        printf("\n%s","Device is disabled");
        fprintf(stream,"\n\\t<Status>%s\\t</Status>","Device is disabled");
        return TRUE;
    }
    if(status & DN_HAS_PROBLEM)
    {
        hasInfo = TRUE;
        printf("\n%s","Device has a problem");
        fprintf(stream,"\n\\t<Status>%s\\t</Status>","Device has a problem");
    }
    if(status & DN_PRIVATE_PROBLEM)

```

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**CERTIFICATE OF CORRECTION**

Page 12 of 21

PATENT NO : 7,325,170

APPLICATION NO. : 10/804,290

ISSUE DATE : Jan. 29, 2008

**INVENTOR(S)** : Karamadai Srinivasan, et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

    {
        hasInfo = TRUE;
        printf("\n%s", "Device has a problem reported by the driver");
        fprintf(stream, "\n\t<Status>%s\</Status>", "Device has a problem reported by
the driver");
    }
    if(status & DN_STARTED)
    {
        printf("\n%s", "Device has been started");
        fprintf(stream, "\n\t<Status>%s\</Status>", "Device has been started");
    }
    else if (!hasInfo)
    {
        fprintf(stream, "\n\t<Status>%s\</Status>", "Device is currently stopped");
        printf("\nDevice is currently stopped");
    }
    return TRUE;
}

int GetDeviceInfoAndDelete(char * devIDtoDelete)

```

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## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 13 of 21

PATENT NO : 7,325,170  
APPLICATION NO. : 10/804,290  
ISSUE DATE : Jan. 29, 2008  
INVENTOR(S) : Karamadai Srinivasan, et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```
{
    HDEVINFO devs = INVALID_HANDLE_VALUE;
    DWORD err;
    int failcode = EXIT_FAIL;
    DWORD devIndex;
    SP_DEVINFO_DATA devInfo;
    SP_DEVINFO_LIST_DETAIL_DATA devInfoListDetail;
    BOOL matchFound = FALSE;
    SP_REMOVEDEVICE_PARAMS rmdParams;
    LPCSTR action = NULL;
    TCHAR devID[MAX_DEVICE_ID_LEN];
    devInfoListDetail.cbSize = sizeof(devInfoListDetail);
    printf("Device to be deleted is %s", devIDtoDelete);
    devs = SetupDiGetClassDevs(
        NULL, NULL, NULL, DIGCF_ALLCLASSES | DIGCF_PRESENT);
    if (devs == INVALID_HANDLE_VALUE)
    {
        err = GetLastError();
        printf("SetupDiGetClassDevs failed: %lx\n", err);
        failcode = EXIT_FAIL;
        goto final;
    }
}
```

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## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

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PATENT NO : 7,325,170  
APPLICATION NO. : 10/804,290  
ISSUE DATE : Jan. 29, 2008  
INVENTOR(S) : Karamadai Srinivasan, et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```
devInfoListDetail.RemoteMachineHandle = NULL;  
strcpy(devInfoListDetail.RemoteMachineName, "");  
devInfoListDetail.cbSize = sizeof(devInfoListDetail);  
devInfoListDetail.cbSize = sizeof(SP_DEVINFO_LIST_DETAIL_DATA);  
devInfo.cbSize = sizeof(devInfo);  
for(devIndex=0; SetupDiEnumDeviceInfo(devs, devIndex, &devInfo); devIndex++)  
{  
    if(CM_Get_Device_ID(devInfo.DevInst.devID, MAX_DEVICE_ID_LEN, 0) != CR_SUCCESS)  
    {  
        strcpy(devID, TEXT("?"));  
    }  
    printf("Dev ID for comparison is : %s\n", devID);  
    if(strcmp(devID, devIDToDelete) == 0)  
    {  
        printf("\n match found");  
        matchFound = TRUE;  
        rmdParams.ClassInstallHeader.cbSize =  
        sizeof(SP_CLASSINSTALL_HEADER);  
        rmdParams.ClassInstallHeader.InstallFunction =  
        DIF_REMOVE;  
        rmdParams.Scope = DI_REMOVEDEVICE_GLOBAL;  
        rmdParams.HwProfile = 0;  
        if(!SetupDiSetClassInstallParams(devs, &devInfo, &rmdParams.ClassInstallHeader,  
        sizeof(rmdParams)) || !SetupDiCallClassInstaller(DIF_REMOVE, devs, &devInfo))
```

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## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

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PATENT NO : 7,325,170

APPLICATION NO. : 10/804,290

ISSUE DATE : Jan. 29, 2008

INVENTOR(S) : Karamadai Srinivasan, et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

        {
            failcode = EXIT_FAIL;
            goto final;
        }
        printf("\n\n Device has been deleted"),
        break;
    }
}
// The device was deleted!!
if(matchFound == FALSE)
{
    printf("\n\n No matching device id found"),
    failcode = EXIT_FAIL;
}
else
{
    failcode = EXIT_OK;
}
final:
if(devs != INVALID_HANDLE_VALUE) {
    printf("destroying DevsInfoList");
    SetupDiDestroyDeviceInfoList(devs);
    printf("After destroying DevsInfoList");
}
return failcode;
}

```

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## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 16 of 21

PATENT NO : 7,325,170  
APPLICATION NO. : 10/804,290  
ISSUE DATE : Jan. 29, 2008  
INVENTOR(S) : Karamadai Srinivasan, et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```
int EnumerateDevice()  
{  
    HDEVINFO devs = INVALID_HANDLE_VALUE,  
    DWORD err;  
    int failcode = EXIT_FAIL;  
    DWORD devIndex;  
    SP_DEVINFO_DATA devInfo;  
    SP_DEVINFO_LIST_DETAIL_DATA devInfoListDetail;  
    DWORD numClass = 0;  
    int skip = 0;  
    devs = SetupDiGetClassDevs(  
NULL,NULL,NULL,DIGCF_ALLCLASSES|DIGCF_PRESENT);  
    //devs = SetupDiGetClassDevs(  
NULL,NULL,NULL,DIGCF_ALLCLASSES|DIGCF_PROFILE);  
    if(devs == INVALID_HANDLE_VALUE)  
    {  
        err = GetLastError();  
        printf( "SetupDiGetClassDevsEx failed: %lx\n", err );  
        failcode= EXIT_FAIL;  
    }  
}
```

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Page 17 of 21

PATENT NO : 7,325,170  
APPLICATION NO. : 10/804,290  
ISSUE DATE : Jan. 29, 2008  
INVENTOR(S) : Karamadai Srinivasan, et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```
        goto final;
    }
    devInfoListDetail.RemoteMachineHandle = NULL;
    strcpy(devInfoListDetail.RemoteMachineName, "");
    devInfoListDetail.cbSize = sizeof(devInfoListDetail);
    devInfoListDetail.cbSize = sizeof(SP_DEVINFO_LIST_DETAIL_DATA);
    devInfo.cbSize = sizeof(devInfo);
    for(devIndex=0; SetupDiEnumDeviceInfo(devs, devIndex, &devInfo); devIndex++)
    {
        TCHAR devID[MAX_DEVICE_ID_LEN];
        if(CM_Get_Device_ID(devInfo.DevInst, devID, MAX_DEVICE_ID_LEN, 0) != CR_SUCCESS)
        {
            strcpy(devID, TEXT("?"));
        }
        // printf("Dev ID for comparison is : %s\n", devID);
        printf("\n\n");
        fprintf(stream, "\n\t<Device>");
        if(!DumpDeviceWithInfo(devs, &devInfo, NULL)) return EXIT_OK;
        DumpDeviceDescr(devs, &devInfo);
        DumpDeviceStatus(devs, &devInfo);
        fprintf(stream, "\n\t</Device>");
    }
```

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## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

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PATENT NO : 7,325,170

APPLICATION NO. : 10/804,290

ISSUE DATE : Jan. 29, 2008

INVENTOR(S) : Karamadai Srinivasan, et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

    }
    failcode = EXIT_OK;
final:
    if(devs != INVALID_HANDLE_VALUE) {
        SetupDiDestroyDeviceInfoList(devs);
    }
    return failcode;
}

int removeDevice(char *devID)
{
    printf("%s",devID);
    return GetDeviceInfoAndDelete(devID);
}

int listDeviceStatus()
{
    int result;
    if(outfile!=NULL)
    {
        stream = fopen(outfile, "w" );
    }
    else
    {
        stream = fopen("devlist.xml", "w" );
    }
}

```

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## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

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PATENT NO : 7,325,170

APPLICATION NO. : 10/804,290

ISSUE DATE : Jan. 29, 2008

INVENTOR(S) : Karamadai Srinivasan, et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

    }
    fprintf(stream, "<DeviceManager>");
    result = EnumerateDevice();
    fprintf(stream, "\n</DeviceManager>");
    fclose( stream );
    return result;
}

void writeReturnCode(int code)
{
    FILE *Ostream;
    Ostream = fopen( "DMStatus.out", "w" );
    fprintf(Ostream, "%i", code);
    fclose(Ostream);
}

void main(int argc, LPCTSTR argv[])
{
    int retval;
    if(argc<2)
    {

```

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## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 20 of 21

PATENT NO : 7,325,170

APPLICATION NO. : 10/804,290

ISSUE DATE : Jan. 29, 2008

INVENTOR(S) : Karamadai Srinivasan, et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

printf("Wrong arguments");
writeReturnCode(3);
exit(3);
}
if(strcmp(argv[1],"remove")==0)
{
    //Check if the id is specified
    printf("calling remove device %s ", argv[2]);
    if(argv[2]==NULL)
    {
        printf("Missing device id");
        writeReturnCode(3);
        exit(3);
    }
    retval = removeDevice(argv[2]);
    writeReturnCode(retval);
    exit(retval);
}
if(strcmp(argv[1],"status")==0)
{
    // if the out file name is specified
    if(argc==3)
    {
        outfile =argv[2];
    }
}

```

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ISSUE DATE : Jan. 29, 2008

INVENTOR(S) : Karamadai Srinivasan, et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

                printf("Calling status");
                retval = listDeviceStatus();
                writeReturnCode(retval),
                exit(retval),
            }
        writeReturnCode(2);
        exit(2);
    }

```

- -

In column 16, line 2, in Claim 3, delete "Suitable" and insert - - suitable - -, therefor.

In column 16, line 52, in Claim 9, delete "deivce" and insert - - device - -, therefor.

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